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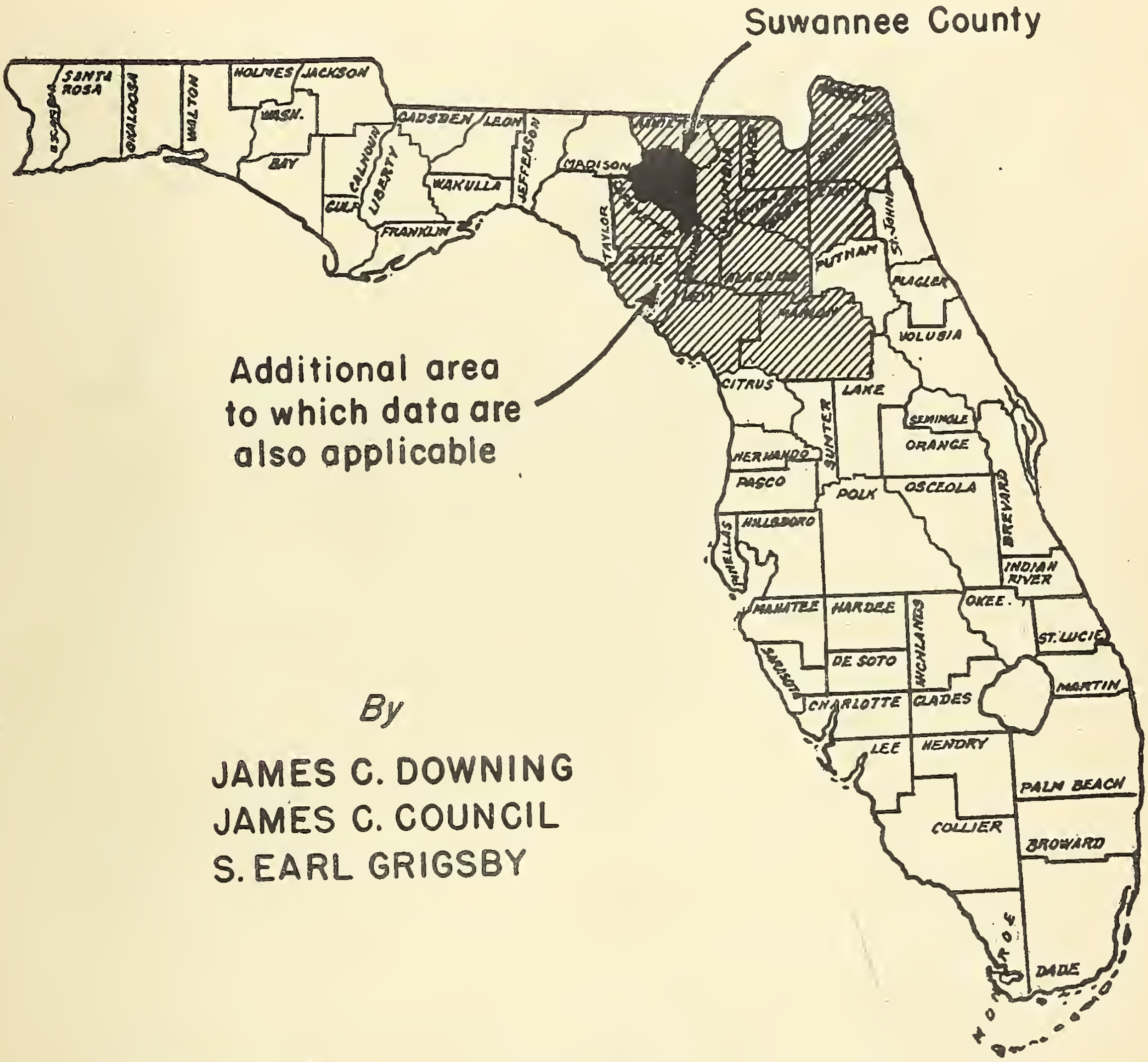
BALANCING LABOR AND LAND RESOURCES FOR WARTIME PRODUCTION



By

JAMES C. DOWNING
JAMES C. COUNCIL
S. EARL GRIGSBY

JANUARY 1943

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BALANCING LABOR AND LAND RESOURCES FOR WARTIME PRODUCTION
SUWANNEE COUNTY, FLORIDA 1/

By
James C. Downing
James C. Council
and
S. Earl Grigsby

PRELIMINARY

Maximum agricultural production requires the best utilization of the available labor supply. By the time another year has passed, 5 to 10 millions of our men will be in the Armed Forces, and millions more will be engaged in backing up these fighting men with munitions and supplies. A large proportion of the men in the Armed Forces and both men and women employed in the manufacture of war supplies will come from areas like Suwannee County, Florida, where this study was conducted.2/ In peacetime, like other counties in the farming area in which it is located, Suwannee has a large surplus of farm labor. Indications are that a definite surplus of farm labor will exist during most months in 1943, even though anticipated farm production will be greater than in 1941 or 1942.

With military demands for men constantly increasing, with manufacture of war materials expanding, and with the need for far greater agricultural production, the labor supply picture in Suwannee County may be changed drastically as a result of the exodus of farm workers and increased farm production. As concluded later in this report, it appears that shortages will be most likely to develop in 1943 only during the harvest season, and even then not if all available labor is used wisely.

This report outlines the man, horse, and tractor labor requirements for the crops most commonly grown in the area. Labor requirements for usual operations and the periods during which those operations are performed as reported herein are based on the usual situation. "Usual" pertains to the most common practices rather than to an average for practices on all farms. Data were obtained from 50 farms selected at random, but in approximately equal numbers within each of the major size-type groups of operating units in the county.

1/ The Bureau of Agricultural Economics, USDA, and the Department of Agricultural Economics, Florida Experiment Station, cooperated in the planning and initiation of this study.

2/ Suwannee County was selected as representative of the general farming area of north Florida. Production practices data for specific crops are also applicable to much of west Florida. Approximately 200 labor-requirement records were taken on the major field crops. The farms visited were selected from each of the major size-type groups of farms.

SUWANNEE COUNTY AGRICULTURE

Chief sources of cash income to Suwannee County farmers are flue-cured tobacco, hogs, and short staple cotton. Tobacco yields, by virtue of fairly heavy fertilizer applications, are normally about 910 pounds per acre. Cotton yields, however, usually are very low, as is the case in many "fringe" cotton counties, such as this one. Corn interplanted with peanuts is the chief feed crop. The interplanted peanuts are harvested by hogs. The corn is "pulled" from the stalks before the hogs are turned into the field. Acreages and yields of important Suwannee County crops are shown in table 1.

Table 1.- Crop acreage for 1942 and normal yields,
Suwannee County, Florida 1/

Item	Actual 1941	Estimated 1942	Feasible 1943	"Normal" yield
	Acres	Acres	Acres	Per acre
Tobacco (flue-cured)	3,280	3,648	3,648	910 lbs.
Cotton (other than S. I.)	1,556	2,500	2,500	128 lbs.
Cotton (Sea Island)	1,275	300	300	48 lbs.
Peanuts harvested	2,470	9,000	15,000	545 lbs.
Corn and peanuts interplanted 2/	82,000	83,000	83,000	3/ 7 bus.
Corn (alone)	17,000	17,000	17,000	10 bus.
Peanuts alone for hogging	5,780	9,000	6,000	4/232 lbs.

1/ 1941 preliminary data from the AAA and State Agricultural Statistician's offices.

2/ "1-and-1" basis (1 row corn and 1 row peanuts).

3/ It is estimated that about 116 pounds of pork (live weight) could be obtained from grazing an acre of interplanted peanuts after the corn has been gathered.

4/ Estimated live-weight gain per acre for hogs grazing peanuts planted solid.

Hogs constitute the most important class of livestock in the county. Most of these "mixed-breed" hogs are fattened on peanuts interplanted with corn, or planted alone. Comparatively few are raised on open range. The greatest difficulties with hogs in this section appear during the spring and summer--before peanuts are ready to be grazed. Most farmers do not have enough feed to carry their shotes in good condition through this period. As a result, the rate of gain is slow even when these pigs have access to plenty of feed. Due to poor care and feeding of sows prior to farrowing, the average number of pigs per sow has been low and losses before weaning time have been high. Within recent years, vaccination has been more widely adopted. In 1943 probably most of the hogs in the county will be vaccinated. High hog prices have done much to increase the attention paid to disease control. Feeding more grain during the spring and summer to the feeder pigs and to "piggy" sows would pay well.

Cattle on free range provide a source of income to a few farmers. Annual beef production per beef cow from these herds is low because of poor range conditions and a low calving rate. A survey carried out by the county agent's office indicated that of approximately 3,700 "milk cows" in the county only 300 were "improved" dairy cows; the remainder are range cows, milked for 2 or 3 months during the year. Production from these range cows is low, averaging from 2 to 3 quarts each day for the period milked.

Chickens provide a source of cash income on most farms, although average egg production per hen is low (only 4.3 dozens per hen in 1939, according to the census).

Suwannee County is uniform throughout, both in soils and topography. The soil is a light, loamy sand; the topography is level to slightly rolling and is well-suited to the use of tractors--the only type of heavy machinery commonly used.

SIZE-TYPE GROUPS OF FARMS IN SUWANNEE COUNTY

Farm size group determinations were based upon harvested cropland, since the area of land actually tended annually is an accurate measure of size of operation in this area. On the average, half the total cropland here "lies out" every year. Forty-three percent of the farms were found to be small, 31 percent medium, and 26 percent large. 3/

Farm type designations are based on enterprises returning the largest portions of the gross cash farm income. Income calculations reflect average yields and 1935-39 prices. On this basis, 1 acre of tobacco is equivalent to about 11 acres of short-staple cotton. A farm with 1 acre of tobacco and 10 acres of cotton would be considered a "tobacco-cotton" type. Had there been 1 acre of tobacco and 12 acres of cotton, it would have been included in the "cotton-tobacco" group. The crop enterprise returning the greatest proportion of gross cash income was named first. In all cases, livestock enterprises followed cash crop type designations. A farm with important tobacco and hog enterprises, for example, was typed "tobacco-hog" although, in some instances, the hog enterprise returned more gross income than tobacco. Dairy and poultry enterprises were of such small commercial importance that separate type groups were not established for them. Most important among the various farm types in Suwannee County are the tobacco-hog units (table 2). Next, in order of importance, are the tobacco-cotton-hog, the specialized tobacco, and the tobacco-peanut-hog types. Hog farms--that is, farms where hogs are the chief source of cash income--are few in number and are confined to the small-sized group. Small farms in this area generally have fewer cash enterprises than the larger farms. For example, all the strictly tobacco type farms are small, whereas most of the tobacco-peanut-hog farms are large. As a result of expanding certain enterprises for the war effort, farm type may be expected to change somewhat. If all the tobacco-hog farms were to grow peanuts for harvesting in 1943, they would immediately become tobacco-peanut-hog farms, thereby increasing the proportion of the large farms of that type to 64 percent (assuming that the farms with tobacco, peanut, and hog enterprises in 1941 continued them in 1943).

Farms upon which production is limited almost altogether to home uses occur mostly in the small-sized group. These farm operators depend upon outside sources of cash income. Farms which did not fit into the major type categories were included in the miscellaneous group.

3/ Harvested acreage intervals used as the basis for size are as follows: small, 0 to 35.9; medium, 36 to 70.9; large 71 or over.

Table 2. - Number of farms in major size-type groups, Suwannee County, Florida, 1941 1/

Type of farm	Size of farm 2/				Percent of total
	Small	Medium	Large	Total in county	
	Number	Number	Number	Number	Percent
Tobacco-hog	203	260	176	639	35.0
Tobacco-peanut	---	35	---	35	2.0
Tobacco-peanut-hog	---	97	128	225	12.4
Tobacco	238	---	---	238	13.1
Tobacco-cotton	53	---	---	53	3.0
Tobacco-cotton-hog	53	84	145	282	15.5
Hog	62	---	---	62	3.4
Production for home use 3/	79	31	---	110	6.0
Miscellaneous	86	64	24	174	9.6
Total	774	571	473	1,818	100.0

1/ Based upon a 50-percent sample of AAA compliance records for 1941 and Farm Plan Sheets for 1942.

2/ Harvested acreage intervals used as the basis for size are as follows: small, up to 35.9; medium, 36 to 70.9; large, 71 or over.

3/ Cash for family living expenses are largely from off-farm sources.

LABOR REQUIREMENTS FOR IMPORTANT SUWANNEE COUNTY CROPS

Suwannee County farming systems have been built around a readily available supply of labor. Tobacco, the chief income-earner, requires a large amount of hand work, particularly at harvest-time (fig. 1). Most of this labor is provided by family members, but labor swapping and hiring nearly always are necessary.

Land breaking is done either with two mules or a tractor for power on most of the medium- and large-sized farms. Ordinarily, a one-mule crop is considered to be 30 acres of cropland harvested, but on the three sizes of farms (table 3) there sometimes is a wide variation in the acreage harvested with a given quantity and type of equipment.

The operations and the labor requirements for each crop are summarized in terms of the usual or most common situation. On many farms the efficiency of man labor and utilization of mule or tractor power are far above average. At the other extreme, there are instances of great inefficiency in the use of man and mule labor. This "slack" can and must be "taken up" as wartime shortages become more severe.

Generally, such factors as year-to-year variations in weather, competition among other enterprises for attention, and the availability of labor affect the timing of field operations. Tobacco gets the "first call" in Suwannee County. In practice, the usual period for the different tobacco operations are followed closely by most farmers. Dates of operations for other enterprises vary over a greater range of time as compared with the usual periods reported in table 4.

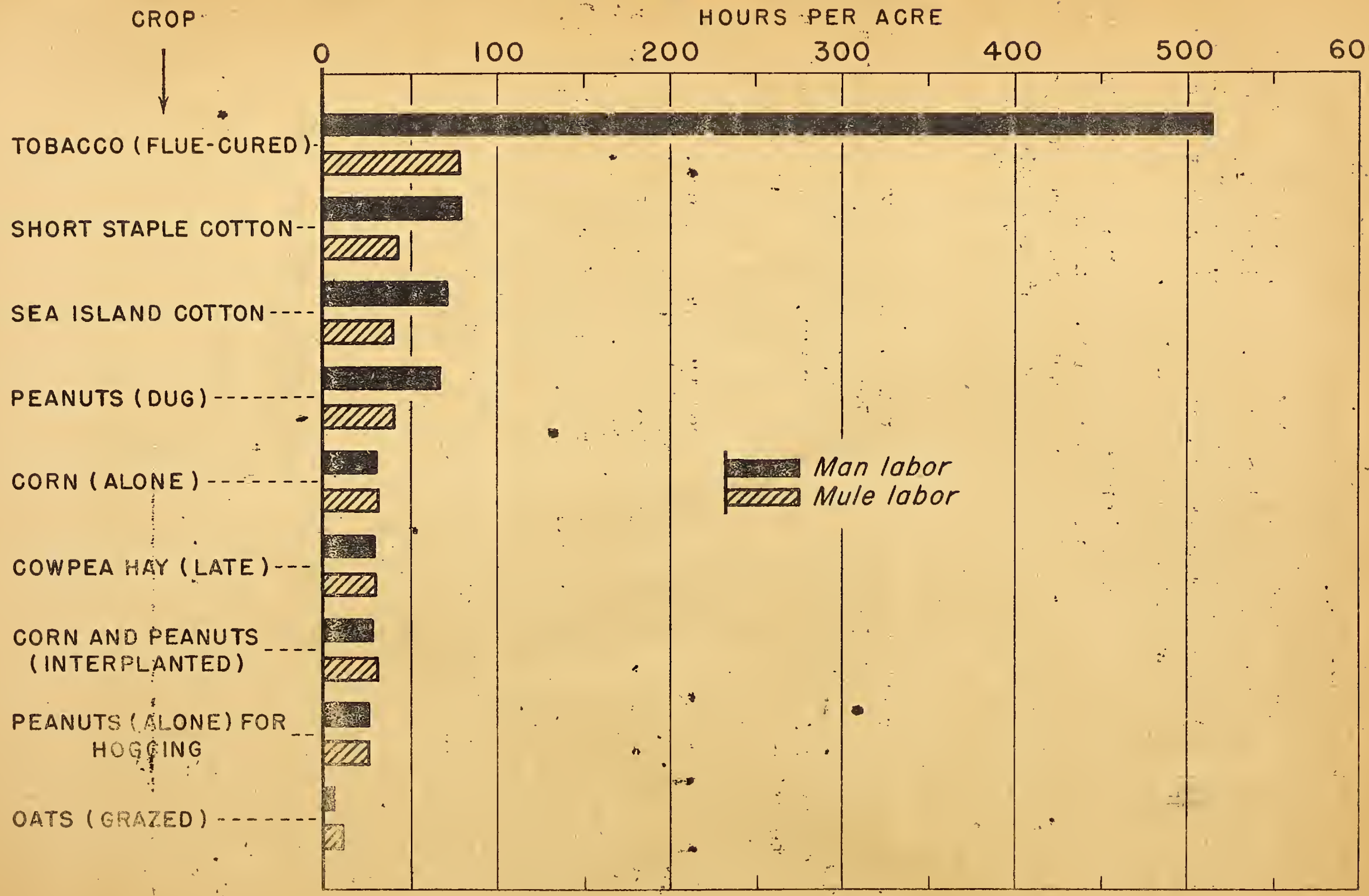
Tobacco.- Most farmers in the county grow tobacco, but acreages per farm are low. The usual acreage on small tobacco-hog farms in 1941 was 1.8, compared to 2.8 on medium-sized farms of the same type and 3.5 on the large tobacco-cotton-hog type farms. Yields usually are good, averaging about 910 pounds per acre with fertilizer applications of approximately 1000 pounds per acre. The 1942 tobacco acreage is expected to be 10 percent above that of 1941.

Tobacco requires much more man labor per acre than any other Suwannee County crop—about 8 times as much as dug peanuts, for example (tables 3 and 4). Labor peaks for tobacco production are highest in the spring and late summer. The needs for extra labor are much greater at harvest time during the last of June and the month of July. Setting usually is done during the first 10 days of April and requires about 40 man-hours per acre. Hand setters generally are used in the operation.

Harvesting—which consists of "cropping" 4/ (removing the plant leaves), stringing the leaves, and hanging them in the barn to be cured—usually extends over a period of 5 weeks. As a rule, each field is "cropped"

4/ Often referred to as the "stripping" operation.

TOTAL MAN AND MULE LABOR REQUIREMENTS FOR CROP PRODUCTION, SUWANNEE COUNTY, FLORIDA*



*ASSUMES TWO-MULE EQUIPMENT LEVEL

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FIGURE 1

Table 3. - Usual labor requirements per acre for major field crops, by bi-monthly periods, Suwannee County, Florida 1/

Period		Tobacco 2/				Corn and peanuts interplanted						Oats for grazing 3/			
		1-mule		2-mule		1-mule		2 mule		Tractor		1-mule		2-mule	
		Man	Mule	Man	Mule	Man	Mule	Man	Mule	Man	Tract.	Man	Mule	Man	Mule
		Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours
Jan.	1 - 15	25.0	10.0	22.5	10.0										
	16 - 31	5.0	5.0	2.5	5.0	5.0	5.0	2.5	5.0	1.0	1.0				
Feb.	1 - 15	2.0	2.0	1.7	1.7	5.0	5.0	2.5	5.0	1.0	1.0				
	16 - 28	8.0	3.0	6.7	1.7										
Mar.	1 - 15	6.0	3.0	2.9	2.9	1.3	1.3	1.0	1.0	.5	.5				
	16 - 31	8.8	8.8	7.5	7.5	3.9	3.9	3.9	3.9	.5	.5				
Apr.	1 - 15	41.3	11.3	41.3	11.3	2.5	2.5	2.5	2.5	1.0	1.0				
	16 - 30	14.0	5.0	12.0	5.0	3.8	3.8	3.8	3.8	1.0	1.0				
May	1 - 15	11.5	2.5	11.5	2.5	3.8	3.8	3.8	3.8	1.0	1.0				
	16 - 31	6.5	2.5	6.5	2.5										
June	1 - 15	16.5	2.5	16.5	2.5	3.8	3.8	3.8	3.8	1.0	1.0				
	16 - 30	104.5	7.5	71.5	7.5										
July	1 - 15	159.0	10.0	119.0	10.0										
	16 - 31	219.0	10.0	192.0	10.0										
Aug.	1 - 15														
	16 - 31														
Sept.	1 - 15					4.0	2.0	4.0	2.0	4.0	2.0				
	16 - 30														
Oct.	1 - 15											11.3	10.0	6.3	10.0
	16 - 31														
Nov.	1 - 15														
	16 - 30														
Dec.	1 - 15														
	16 - 31														
Total		627.1	83.1	514.1	80.1	33.1	31.1	27.8	30.8	11.0	9.0	11.3	10.0	6.3	10.0

- Continued -

Table 3. – Usual labor requirements per acre for major field crops, by bi-monthly periods, Suwannee County, Florida 1/ —Continued

Period		Peanuts dug							Peanuts planted "solid" for hogging off					
		1-mule		2-mule		Tractor			1-mule		2-mule		Tractor	
		Man	Mule	Man	Mule	Man	Mule	Tract.	Man	Mule	Man	Mule	Man	Tractor
		Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours
Jan.	1 – 15													
	16 – 31	5.0	5.0	2.5	5.0	1.0		1.0						
Feb.	1 – 15	5.0	5.0	2.5	5.0	1.0		1.0	5.0	5.0	2.5	5.0	1.0	1.0
	16 – 28	.8	.8	.5	.5				5.0	5.0	2.5	5.0	1.0	1.0
Mar.	1 – 15	.9	.9	.5	.5									
	16 – 31								0.5	0.5	0.5	0.5		
Apr.	1 – 15	3.3	3.3	3.3	3.3	1.0		1.0	3.8	3.8	3.8	3.8	1.0	1.0
	16 – 30	8.8	3.8	8.8	3.8	1.0		1.0	6.3	3.8	6.3	3.8	1.0	1.0
May	1 – 15	8.8	3.8	8.8	3.8				2.5		2.5			
	16 – 31					1.0		1.0	3.8	3.8	3.8	3.8	1.0	1.0
June	1 – 15	3.8	3.8	3.8	3.8	1.0		1.0	3.8	3.8	3.8	3.8	1.0	1.0
	16 – 30													
July	1 – 15													
	16 – 31													
Aug.	1 – 15													
	16 – 31													
Sept.	1 – 15													
	16 – 30	30.0	10.0	30.0	10.0	30.0	10.0							
Oct.	1 – 15													
	16 – 31	7.0	5.0	7.0	5.0	7.0		5.0						
Nov.	1 – 15													
	16 – 30													
Dec.	1 – 15													
	16 – 31													
Total		73.4	41.4	67.7	40.7	43.0	10.0	11.0	30.7	25.7	25.7	25.7	6.0	6.0

– Continued –

Table 3. - Usual labor requirements per acre for major field crops, by bi-monthly periods, Suwannee County, Florida 1/ —Continued

Period		Short staple cotton							Sea Island cotton 4/						
		1-mule		2-mule		Tractor			1-mule		2-mule		Tractor		
		Man	Mule	Man	Mule	Man	Mule	Tract.	Man	Mule	Man	Mule	Man.	Mule	Tract.
		Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours
Jan.	1 - 15														
	16 - 31	5.0	5.0	2.5	5.0	1.0		1.0	5.0	5.0	2.5	5.0	1.0		1.0
Feb.	1 - 15	5.0	5.0	2.5	5.0	1.0		1.0	5.0	5.0	2.5	5.0	1.0		1.0
	16 - 28														
Mar.	1 - 15								1.3	1.3	3.8	3.8	3.0	3.0	
	16 - 31	11.4	11.4	9.6	9.6	9.6	9.6		7.1	7.1	2.6	2.6	3.4	3.4	
Apr.	1 - 15	8.3	3.3	8.3	3.3	6.0		1.0	10.0		5.0		5.0		
	16 - 30	5.0		10.0	5.0	6.0		1.0	15.0	5.0	10.0	5.0	6.0		1.0
May	1 - 15	3.8	3.8	3.8	3.8	1.0		1.0	5.8	3.8	5.8	3.8	3.0		1.0
	16 - 31	3.8	3.8	3.8	3.8	1.0		1.0	7.8	3.8	7.8	3.8	5.0		1.0
June	1 - 15	3.8	3.8	3.8	3.8				7.8	3.8	7.8	3.8	4.0		
	16 - 30	3.8	3.8	3.8	3.8	1.0		1.0	7.8	3.8	7.8	3.8	5.0		1.0
July	1 - 15								5.8	3.8	5.8	3.8	2.0		
	16 - 31														
Aug.	1 - 15	10.5		10.5		10.5									
	16 - 31	10.5		10.5		10.5			5.5		5.5		5.5		
Sept.	1 - 15	10.5		10.5		10.5			5.5		5.5		5.5		
	16 - 30								5.5		5.5		5.5		
Oct.	1 - 15														
	16 - 31														
Nov.	1 - 15														
	16 - 30														
Dec.	1 - 15														
	16 - 31														
Total		81.4	39.9	79.6	43.1	58.1	9.6	7.0	94.9	42.4	77.9	40.4	54.9	6.4	6.0

- Continued -

Table 3. – Usual labor requirements per acre for major field crops, by bi-monthly periods, Suwannee County, Florida 1/ —Continued

Period		Corn planted alone						Cowpeas for hay					
		1-mule		2-mule		Tractor		1-mule		2-mule		Tractor	
		Man	Mule	Man	Mule	Man	Tract.	Man	Mule	Man	Mule	Man	Tract.
		Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours
Jan.	1 – 15												
	16 – 31	5.0	5.0	2.5	5.0	1.0	1.0						
Feb.	1 – 15	5.0	5.0	2.5	5.0	1.0	1.0						
	16 – 28												
Mar.	1 – 15	5.0	5.0	5.0	5.0	.3	.3						
	16 – 31	1.3	1.3	1.3	1.3	.3	.3						
Apr.	1 – 15	2.5	2.5	2.5	2.5	1.0	1.0						
	16 – 30	3.8	3.8	3.8	3.8								
May	1 – 15	3.8	3.8	3.8	3.8	1.0	1.0						
	16 – 31												
June	1 – 15	3.8	3.8	3.8	3.8	1.0	1.0						
	16 – 30							8.5	8.5	6.0	8.5	1.5	1.5
July	1 – 15							9.8	9.8	7.3	9.8	2.2	2.2
	16 – 31							3.7	3.7	3.7	3.7	1.3	1.3
Aug.	1 – 15												
	16 – 31												
Sept.	1 – 15	5.0	2.5	5.0	2.5	5.0	2.5	6.0	4.0	6.0	4.0	6.0	4.0
	16 – 30							6.0	4.0	6.0	4.0	6.0	4.0
Oct.	1 – 16												
	16 – 31												
Nov.	1 – 15												
	16 – 30												
Dec.	1 – 15												
	16 – 31												
Total		35.2	32.7	30.2	32.7	10.6	8.1	34.0	30.0	29.0	30.0	17.0	13.0

- Continued -

1/ The subheadings "1-mule," "2-mule," and "tractor" refer to the level of equipment. Small farms generally use 1-mule equipment, while medium- and large-sized farms use 2-mule equipment. About the only difference, however, is that 2-mule farms have 2-mule turning plows and 2-mule wagons. Labor and equipment for mowing cowpea hay, an operation requiring 2 mules, usually are hired by the 1-mule farmers as well as by many other operators who do not have the necessary equipment. Tractor equipment is found only on the medium or large farms.

2/ Man-labor-requirement estimates for tobacco include approximately 77 hours tending curing-barn fires, which must be done at night.

3/ On a tractor equipment basis only 3.3 man-hours and 2 tractor-hours are required to produce an acre of oats for grazing.

4/ The small amount of time indicated during the period August 16 to September 30 for picking the crop is due to the very low yield obtained in the county—48 pounds of lint per acre is the weighted average yield for the 5-year period 1937-41 (inclusive).

once a week during the period. This is necessary because of the way in which the leaves ripen--from the bottom upward. Much of the labor needed for harvesting operations is obtained by swapping. Altogether, harvesting requires about 100 hours per acre. "Suckering," an operation requiring about 50 hours, precedes the harvesting operation.

Harvesting, curing, and grading of tobacco usually are completed in July, in order to get the tobacco on the Live Oak market during the first 2 weeks of August. If the tobacco cannot be sold there it must be hauled a comparatively long distance to some other market center. Occasionally farmers do not complete their harvesting and grading before August 10, but most of them hope to have their tobacco ready the day the market opens. Then they can place the tobacco on the auction floor when they think the market price is at its peak.

A number of operators with small acreages complained that it was necessary at harvest time to hire and pay labor for a full day, although one cropping took only half or two-thirds of a day. A somewhat similar situation exists in connection with the curing operation. A small volume requires about the same amount of time as large quantities. Some operators with small acreages are able to arrange harvesting so that they and a neighbor can cure tobacco cooperatively, the men "taking turns" watching the fire. In other instances quantities from small croppings on two or more farms are cured at the same time. On this basis, the time required for each acre cured is greatly reduced.

It was assumed for this analysis that 212 hours of man labor are ordinarily used for curing each acre of tobacco on a small farm, 129 hours on a medium-sized farm, and 103 hours on a large farm. Time requirements are based on the usual tobacco acreage for all farms in each of the three size groups growing tobacco; each curing requires 72 hours and handles the tobacco from one of the five or six croppings.

Corn and peanuts interplanted:- From an acreage standpoint, this crop combination is by far the most important in the county. On individual operating units the proportion of all crops in corn and peanuts interplanted frequently is as high as 90 percent.

The interplanting "system" varies considerably among the different operating units. This analysis is based upon the most usual plan for planting corn and peanuts together--namely, the "1-and-1" plan, alternating one row of corn with one row of peanuts, $3\frac{1}{2}$ feet apart. (On this basis, rows of corn are 7 feet apart.) Cowpeas or velvet beans usually are planted in the corn row. There are numerous variations of this basic plan, among which the planting of peanuts in the corn row to replace cowpeas is one of the most popular. (For conservation payment purposes the ratio is considered as three-fourths peanuts and one-fourth corn.) Other variations, for example, include 2 rows of peanuts to 1 row of corn and 2 rows of corn to 1 row of peanuts. The peanuts usually are planted about 10 days later than the corn, which is always harvested before the hogs are allowed in the field--usually soon after September 1.

The total number of man-hours usually required to produce an acre of corn and peanuts interplanted is only 27.8, slightly more than one-third the time required to produce an acre of short-staple cotton, and about one-twentieth the time required to produce an acre of tobacco. Mule labor required to produce an acre of corn and peanuts is less than one-third the amount required for tobacco.

Yields of this crop combination need to be expressed in two ways: (1) the bushels of corn harvested and (2) the gain in pounds of pork. The usual corn yield is 7 bushels per acre; the usual gain from peanuts was computed to be 116 pounds. The average per-acre gain in live weight was estimated from total gains reported by farmers and the acreage of peanuts used for hogging off. Conversions were made to put interplanted and solid peanuts on an equivalent basis. When additional concentrates were fed, an allowance was made for gains from these feeds. A great deal more research is needed before authoritative estimates can be made for live-weight pork gains from peanuts.

Inadequate feeding before peanuts are ready results mainly from the lack of home-grown feeds to carry pigs through the spring and summer. In far too many cases the hogs are so thin that they fairly stagger into the field. One opportunity for increasing the quantity of feed available before peanuts are ready would be to sow larger acreages of oats or rye for winter and spring grazing.

Most of the hogs are sold by the last of December, but there is frequently such a wide range in the weight of the pigs when they are turned into the field that some are kept as long as February before they are heavy enough to sell. Usual selling weight has been around 130 pounds.

Corn planted alone.- Most Suwannee County farmers usually plant a part of their corn crop alone to obtain a higher corn yield per acre than is possible where corn and peanuts are planted together. Indications are that interplanting corn and peanuts will result in greater returns per acre if the farmer has hogs to fatten. However, if the purpose is primarily that of obtaining corn for the mules, the farmer is likely to plant corn alone. Total labor requirements for corn alone are about the same as for corn and peanuts interplanted. Prevailing opinion is that corn planted alone produces more per acre; there are many who believe otherwise.

Short-staple cotton.- Suwannee is one of the "fringe" cotton counties of the Southeast. Production has not been great in past years primarily because of poor yields, in turn due to heavy boll-weevil infestations, low soil fertility, and losses from wilt. In 1941 only slightly over one-third of the allotted cotton acreage was planted. In itself, this is good evidence that Suwannee County farmers do not consider short-staple cotton a desirable enterprise. Recently there has been considerable interest in growing an increased acreage of long-staple Upland cotton varieties.

Applying poison to short-staple cotton is not a usual practice, in spite of heavy losses from boll weevils. The rate of fertilizer application varies from 100 to 400 pounds per acre, but most farmers apply 200 pounds, commonly of the 3-8-5 analysis. No cases were noted where short-staple cotton was side-dressed with nitrate of soda. The usual practice is to plant only a half bushel of seed per acre.

Operations requiring the greatest amount of labor include picking, chopping, and cultivating. Picking requirements are based on the 1942 average yield of 128 pounds of lint per acre and assume the usual rate of 100 pounds of seed cotton picked per day (tables 3 and 4). Picking usually is accomplished between August 1 and September 15, although in some cases it may extend as late as October 15. If necessary, planting can be prolonged for a month, but most farmers have found it better to plant in the 10-day period, April 20 to May 1. Early plantings suffer less boll-weevil damage.

Sea Island cotton.- Comparative acreages of short-staple and Sea Island cotton in Suwannee County during the 4-year period, 1939-42, are as follows:

Year	Short-staple cotton (acres)	Sea Island cotton (acres)
1939	1150	150
1940	2440	353
1941	1566	1275
1942	1/ 2500	1/ 300

1/ Preliminary estimate.

As this comparison indicates, the acreage of Sea Island cotton changed greatly during this period. The low 1942 "expected" acreage evidently is a direct result of the crop failure in 1941. The crop was "pushed" as a desirable enterprise through 1941. The unfortunate experiences of many growers do not seem to warrant a continuation of the recommendation.

Because of the lower yield of Sea Island cotton, total labor requirements are slightly below those for short staple. The average yield in 1941 was only 29 pounds per acre—scarcely enough to justify picking. In 1941 the acreage of Sea Island was only 20 percent under that for all other cotton produced in the county. Up to picking time, Sea Island requires considerably more labor than short-staple cotton chiefly because of the poisoning operation. The important cultural and labor requirement differences between these two cotton types are summarized as follows:

(1) Usually poison is applied 8 to 10 times during the season to Sea Island cotton, though rarely ever to short staple. This is because of the greater susceptibility of Sea Island cotton to the boll weevil. Poisoning would be a profitable practice for short staple and might make the yields compare more favorably with those in the major sections of the Cotton Belt.

(2) Due to lower yield, an acre of Sea Island requires less time for picking than short-staple cotton. However, for an equal yield Sea Island cotton would require more time. With the low production generally in evidence, farmers reported that one man could pick 100 pounds of short-staple seed cotton per day as compared with 60 pounds of Sea Island.

(3) Sea Island must be planted earlier than short staple. If planted after April 5, the boll weevil almost surely will ruin the crop.

(4) The time required per acre previous to planting is greater for short-staple cotton. With short staple, the furrow is "opened" or "deepened" following marking the rows, after which the fertilizer is drilled into the bottom of the "opened" furrow. Since the fertilizer is drilled fairly deep, it is necessary to plow both sides of the row to cover the fertilizer and make the ridge. With Sea Island, the fertilizer is drilled in along the row mark without "opening" the furrow. Drilling the fertilizer in this way makes a separate operation for "ridging" unnecessary; hence one operation (drilling the fertilizer) accomplishes the same purpose as do three operations in planting short staple.

Some special subsidy program—such as a grower contract under which the Government would share some of the risk—and a program to improve the cultural practices usually followed will be needed if farmers are to be expected to produce any appreciable quantity of Sea Island cotton. In view of unfortunate experiences in this area thus far, indications are that production efforts for the war period could be utilized more advantageously in producing long staple Upland cotton than in the production of Sea Island. The 5-year average yield of 48 pounds of lint per acre for Suwannee County (29 pounds in 1941) does not return enough income over production costs to justify growing the crop. It is not definitely known whether Sea Island could or should be "saved" by improved production practices. It is unlikely however that much Sea Island cotton will be grown in the future on the basis of present practices.

Peanuts harvested (dug).- Peanuts for digging have been relatively unimportant in Suwannee County. Here the relatively large area of "resting" land and underutilized labor makes a large increase in the peanut acreage possible without important reductions in other crops. In 1941 the acreage was only 2,470, but it was increased to about $3\frac{1}{2}$ times that in 1942. It is estimated that 15,000 acres could be produced feasibly in 1943. The 1942 AAA normal yield is 545 pounds. This refers to the quantity of nuts actually dug. A substantial quantity generally gleaned by hogs on open range is often left in the ground. The Florida Runner variety is used almost exclusively in this county for both digging and hogging purposes. Some interest may be shown in the Spanish variety as the acreage planted exclusively for nuts or oil increases in response to war needs. Most of the farmers interviewed are definitely opposed to digging peanuts as a practice for normal times. They believe that hogging is a much more desirable practice because it is soil building, whereas the effect is definitely destructive where digging is practiced.

When peanuts are planted between April 1 and 15, they usually are dug within the 10-day period, September 15 to 25. Planting can be done considerably earlier and much later than these dates, however, and on either basis a satisfactory crop evidently can be secured. Reports indicate that planting can be done as early as March 15 and as late as June 15—a possible planting period of 12 weeks.

Usual peanut planting and tobacco setting dates are about the same (table 4). Although a conflict is indicated, one does not necessarily occur. On a normal acreage basis tobacco setting usually can be carried out in 2 or 3 days. Likewise, peanut planting on a usual acreage basis can be carried out in 3 or 4 days. Conflicts might occur under unfavorable weather conditions. Three cultivations usually are made and weeds are chopped out once. The length of time usually required to dig and stack 1 acre is 30 hours, but farmer estimates for these operations varied from 25 to 40 hours. Fortunately, work competition between crops is not intense when runner peanuts are dug, which usually is done after the cotton is picked and the corn is gathered. Picking generally is done about 1 month after digging and stacking. The farmer assists in this operation by hauling the stacks to the picker and by hauling the baled hay to the barn.

Total man labor requirements for harvested peanuts are 67.7 5/ hours per acre, or about 12 hours per acre less than an acre of short-staple cotton (table 4). Over half the total requirements—37 hours—are for harvesting operations.

Peanuts planted alone for hogging.- From an acreage standpoint, peanuts planted alone for hogging were considerably more important than peanuts for digging through 1941. The situation may be reversed during the war period.

The labor required for peanuts planted for this purpose is usually only 25.7 hours, as compared with 67.7 for peanuts harvested (table 4). Not only is the time required for the harvesting operation eliminated, but also the time required per acre until harvesting time is 5 hours less when peanuts are planted for hogs. This difference is due essentially to less clean cultivation when the peanuts are to be hogged off. For dug peanuts more care is taken to get the grass, but when the peanuts are to be hogged off only half as much time usually is spent in chopping it out. Other preharvest operations require the same time as peanuts to be dug.

Many runner peanuts usually are left in the ground after digging, enough in many instances to produce as much as 50 pounds of pork per acre from gleanings. If the quantity left in the ground were considered to be 130 to 150 pounds, each pound of gain estimated on these farms would require 2.9 pounds of peanuts.

Cowpea hay:- Difficulties in curing any kind of hay are very great in this area and usual yields are low, averaging somewhat less than a half ton per acre. Most cowpeas for hay are planted late in the season—usually between June 15 and July 15. The purpose of late planting is to enable maturity at the time of the year when rainy weather is least likely to hamper curing. The small acreage per farm usually is grown to feed workstock rather than dairy or beef cattle.

Total man labor requirements for this crop are about the same as for corn. Most of the labor is required for the harvesting operation. Custom mowing usually is hired on the basis of $1 per acre, since only a few of the large farms possess the equipment necessary for this operation. The custom charge for baling varies from $1.50 to $3 per ton.

Oats grazed:- Oats for grazing are sown usually during the first half of October. The labor requirement per acre is very small (6.3 hours) and consists of two operations: (1) sowing the oats and (2) plowing them under.

5/ This does not include the time by the peanut picker operator.

Table 4. - Usual man and mule labor requirements and dates of operations for specified crops, Suwannee County, Florida

Flue-cured tobacco

Operation	Usual period of performance		Variation from usual period of performance		Hours labor required per acre 1/	
	From	To	From	To	Man	Mule
Plantbed prep.	Jan. 7	Jan. 15	Dec. 20	Feb. 1	20.0	5.0
Weed plantbed	Feb. 15	Mar. 7	Jan. 30	Mar. 20	5.0	—
Water, soda: Plantbed	Feb. 1	Mar. 15	Jan. 15	Apr. 1	5.0	5.0
Break land	Jan. 1	Feb. 1	Dec. 1	Mar. 15	5.0	10.0
Mark rows	Feb. 25	Mar. 15	Feb. 15	Apr. 1	1.3	1.3
Open furrow	Mar. 15	Apr. 1	Mar. 1	Apr. 5	1.7	1.7
Fertilize	Mar. 15	Apr. 1	Mar. 1	Apr. 5	2.5	2.5
Ridge	Mar. 15	Apr. 1	Mar. 1	Apr. 5	3.3	3.3
Board	Apr. 1	Apr. 10	Mar. 20	Apr. 20	1.3	1.3
Set	Apr. 1	Apr. 10	Mar. 20	Apr. 20	40.0	10.0
Cultivate	Apr. 15	June 20	Apr. 5	July 1	15.0	15.0
Hoe	Apr. 20	May 7	Apr. 15	June 1	10.0	—
Poison	Apr. 25	July 15	Apr. 15	Aug. 1	20.0	—
Top	June 1	June 15	May 25	July 1	5.0	—
Sucker	June 7	July 20	June 1	Aug. 1	50.0	—
Harvest	June 15	Aug. 1	June 10	Aug. 10	100.0	25.0
Cure	June 15	Aug. 1	June 15	Aug. 15	129.0	—
Pack	June 15	Aug. 1	June 15	Aug. 15	10.0	—
Grade	July 15	Aug. 1	July 10	Aug. 15	90.0	—
Total	xxx	xxx	xxx	xxx	514.1	80.1

Corn and peanuts interplanted

Operation	From	To	From	To	Man	Mule
Break land	Jan. 1	Feb. 15	Dec. 1	Mar. 1	5.0	10.0
Mark rows	Mar. 5	Mar. 15	Mar. 1	Apr. 1	1.0	1.0
Open furrow	Mar. 10	Mar. 25	Mar. 1	Apr. 1	1.3	1.3
Plant corn	Mar. 10	Mar. 25	Mar. 1	Apr. 1	1.3	1.3
Plant peanuts	Mar. 20	Apr. 1	Mar. 15	Apr. 15	1.3	1.3
Cultivate	Apr. 5	June 10	Apr. 1	June 15	13.9	13.9
Harvest corn	Sept. 1	Sept. 15	Aug. 15	Nov. 1	4.0	2.0
Total	xxx	xxx	xxx	xxx	27.8	30.8

Short-staple cotton

Operation	From	To	From	To	Man	Mule
Break land	Jan. 1	Mar. 1	Dec. 1	Apr. 1	5.0	10.0
Mark rows	Mar. 15	Mar. 25	Feb. 1	Apr. 15	1.0	1.0
Open furrows	Mar. 20	Apr. 1	Mar. 15	Apr. 15	1.3	1.3
Fertilize	Mar. 20	Apr. 1	Mar. 15	Apr. 15	1.7	1.7
Ridge	Mar. 20	Apr. 1	Mar. 15	Apr. 15	3.3	3.3
Board	Mar. 20	Apr. 1	Mar. 15	Apr. 15	1.0	1.0
Plant	Mar. 20	Apr. 1	Mar. 15	Apr. 15	1.3	1.3
Side	Apr. 7	Apr. 15	Apr. 1	May 1	3.3	3.3
Hoe and thin	Apr. 10	Apr. 20	Apr. 7	May 7	10.0	—
Cultivate	Apr. 15	July 1	Apr. 7	July 20	20.2	20.2
Pick	Aug. 1	Sept. 15	July 15	Oct. 15	31.5	—
Total	xxx	xxx	xxx	xxx	79.6	43.1

- Continued -

Table 4. - Usual man and mule labor requirements and dates of operations for specified crops, Suwannee County, Florida—Cont'd

Operation	Usual period of performance		Variation from usual period of performance		Hours labor required per acre 1/	
	From	To	From	To	Man	Mule
			Sea Island cotton			
Break land	Jan. 10	Feb. 20	Dec. 1	Apr. 1	5.0	10.0
Mark rows	Mar. 1	Mar. 15	Feb. 15	Apr. 1	1.3	1.3
Fertilize and ridge	Mar. 5	Mar. 15	Mar. 1	Apr. 1	2.5	2.5
Board	Mar. 15	Mar. 25	Mar. 10	Apr. 5	1.3	1.3
Plant	Mar. 15	Mar. 25	Mar. 10	Apr. 5	1.3	1.3
Side	Apr. 10	Apr. 25	Apr. 5	Apr. 30	2.5	2.5
Hoe and thin	Apr. 10	Apr. 20	Apr. 5	May 10	10.0	—
Cultivate	Apr. 20	July 1	Apr. 15	July 15	21.5	21.5
Poison	May 1	July 15	Apr. 20	Aug. 1	16.0	—
Pick 2/	Aug. 21	Oct. 1	Aug. 1	Nov. 1	—	—
Total	xxx	xxx	xxx	xxx	61.4	40.4
			Peanuts dug			
Break land	Jan. 1	Mar. 1	Dec. 1	Apr. 1	5.0	10.0
Mark rows	Feb. 15	Mar. 15	Jan. 1	Apr. 1	1.0	1.0
Plant	Apr. 1	Apr. 15	Mar. 15	June 15	3.3	3.3
Hoe	Apr. 20	May 5	Apr. 7	July 7	10.0	—
Cultivate	Apr. 15	June 10	Apr. 1	Aug. 1	11.4	11.4
Dig and stack	Sept. 15	Sept. 25	Sept. 1	Oct. 15	30.0	10.0
Haul to picker	Oct. 15	Oct. 25	Oct. 1	Dec. 15	4.0	2.0
Haul hay to barn	Oct. 15	Oct. 25	Oct. 1	Dec. 15	3.0	3.0
Total	xxx	xxx	xxx	xxx	67.7	40.7
			Peanuts planted alone for hogging off			
Break land	Feb. 1	Mar. 1	Jan. 1	Mar. 1	5.0	10.0
Mark rows	Mar. 20	Apr. 15	Feb. 15	May 20	1.0	1.0
Plant	Apr. 1	Apr. 15	Apr. 1	June 1	3.3	3.3
Cultivate	Apr. 25	June 10	Apr. 15	June 20	11.4	11.4
Hoe	Apr. 20	May 5	Apr. 7	July 7	5.0	—
Total	xxx	xxx	xxx	xxx	25.7	25.7
			Cowpeas for hay (late)			
Break land	June 15	July 15	June 1	July 20	5.0	10.0
Mark rows	June 15	July 15	June 1	July 20	2.0	2.0
Plant	June 15	July 15	June 1	Aug. 1	5.0	5.0
Cultivate	July 7	Aug. 1	July 3	Aug. 15	5.0	5.0
Cut hay and stack	Sept. 1	Oct. 1	Aug. 14	Oct. 15	12.0	8.0
Total	xxx	xxx	xxx	xxx	29.0	30.0

1/ Assumes 2-mule equipment level.

2/ Yields obtained in 1941—29 pounds of lint per acre—do not provide a good basis for approximating labor requirements for harvesting.

Usually the seed is broadcast, the seeding rate being 1 bushel per acre, but 2 bushels per acre would provide a much better stand.

There is a definite need for increased acreages of oats for grazing in this area. At present, farmers with this enterprise are confined almost entirely to those operating medium- and large-sized farms. Although all classes of livestock can graze the oats, hogs generally are allowed to utilize this source of feed and usually are left on the oats for about 1 month. Some farmers leave the hogs longer than a month, but after that very little grazing remains.

Using Tractor Power

The use of tractors offers many opportunities for savings in man labor, particularly with corn and peanuts interplanted or alone. The usual saving with a crop, such as tobacco, is negligible, because the major portion of the labor is performed by hand and the fields are small. It appears impracticable to use tractors to cultivate the small acreages of tobacco which usually are involved. Considerable labor saving appears possible when tractors are used in connection with cotton. The man- and tractor-hours required for producing 1 acre of corn and peanuts (interplanted) are indicated by table 5. Less than half as much man labor is required in cultivating this crop with tractor power as when 1 mule equipment is used.

Table 5.- Usual man and tractor labor requirements per acre and dates of operation

Operation	Corn and peanuts (interplanted)			
	Usual date of operation		Hours labor required	
	From	To	Man	Tractor
Breaking land	Jan. 1	Feb. 15	2.0	2.0
Planting corn	Mar. 10	Mar. 25	.5	.5
Planting peanuts	Mar. 20	Apr. 1	.5	.5
Cultivating 1/	Apr. 5	June 10	4.0	4.0
Harvesting corn	Sept. 1	Sept.15	4.0	2/ 2.0
Total	xxx	xxx	11.0	9.0
Required with 1-mule equipment	xxx	xxx	33.1	31.1

1/ 4 times over.
2/ Assumes tractor used in hauling corn from field.

Tractors are rapidly becoming of greater importance in the county, as indicated by the fact that the number of tractors has increased about 250 percent in the 2-year period since the census was taken. In April 1940 there were only 100 tractors, but by March 1942 the number had increased to approximately 353. The responsible factor has been, without question, the introduction of the small tractor. Dealers reported that 100 more tractors could have been sold in the county last year if manufacturers had been able to supply them. These calculations show that approximately 20 percent of all farm operating units here have tractors.

Although it is difficult to estimate the exact effect that the utilization of 250 additional tractors has had upon the labor supply, there is little doubt that tractors have made up for a sizable proportion of laborers reported to have left the county within the last 2 years. A small tractor of the type commonly found in the county can be used to break 5 to 7 acres per 10-hour day (5 times as much as can a 1-mule plow) and to plant about 20 acres per day of "solid" corn or peanuts.

THE LABOR SUPPLY ON REPRESENTATIVE FARMS

Labor available under pre-war conditions for field operations on representative small, medium, and large farms in Suwannee County consists of all types, including that of women and children (table 6). The latter can do many, but not all, kinds of farm work. They are not as efficient as men in the performance of most farm operations. These factors were considered in converting the labor of women and children to a man-equivalent basis, which provides a method of estimatin the total amount of labor available on any farm for each 2-week period of the year Children of school age are not considered available for farm work during the 8 months when school is in session. Their man-equivalent rating is applied only during the 4-month "vacation" period. In calculating the number of days available Sundays and the usual number of days per month not suitable for field work were excluded.

After the crops have been harvested in early fall, little field work is done until seedbed and plantbed preparation is begun early in January. During this period there is a large excess of available labor above requirements for field work. The "availability" peak occurs from May 15 to September 15, owing to the fact that children are not in school. The difference in the labor supply during other months varies in accordance with days suitable for field work and the contribution that women can make during certain periods. This contribution varies according to their ability to do the kind of field work that needs to be done during the particular period involved (table 6).

These requirements refer only to labor used in field work. There are other duties and tasks to be performed on these farms. The man-days required per month in the performance of ordinary chores involved in caring for livestock on representative farms in Suwannee County are estimated to be about the equivalent of 4 days on small farms, 7 days on medium farms, and 11 days on large farms. Most of these chores are done before and after the field work each day. For that reason the labor required for chores on these farms should not be deducted from the time considered available for field work.

LABOR NEEDS VERSUS SUPPLY ON REPRESENTATIVE FARMS UNDER PRE-WAR AND WARTIME CONDITIONS

The underutilized labor on small farms has long been recognized in the Southeast. The situation in Suwannee County is no exception (figs. 2 and 3). While this study breaks the farms of the county into three size groups - small, medium, and large - most of them would be small by many standards of measurement. The small-and medium-sized farms herein described, especially, easily could be thrown together into a "small-farm" group, if the standards of measurement in the Midwest, for example, were applied. Underutilized labor on each group of farms is indicated further by the fact that with usual pre-war conditions, the small farm utilized only 36 percent of its available labor supply on field crops, the medium farm 35 percent, and the large farm only 39 percent. Field crops comprise more than 85 percent of the total productive labor needs. In the case of the medium-sized farm, however, the man-equivalents available may be somewhat larger than usually found on such farms.

Table 6.- Total labor available in man-equivalents for field work on representative small, medium, and large farms, monthly and annually, Suwannee County, Florida 1/

Small farm (tobacco type)

Man labor	Age	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
		Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days
Operator	34	18.0	20.0	21.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	21.0	18.0	266.0
Operator's wife	32	5.4	6.0	12.6	14.4	14.4	14.4	14.4	14.4	14.4	14.4	12.6	5.4	142.8
Son (in school)	12					6.0	12.0	12.0	12.0	6.0				48.0
Girl (in school)	10					4.8	9.6	9.6	9.6	4.8				38.4
Boy	7													
Total	xx	23.4	26.0	33.6	38.4	49.2	60.0	60.0	60.0	49.2	38.4	33.6	23.4	495.2
Medium farm (tobacco-hog type)														
Operator	48	18.0	20.0	21.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	21.0	18.0	266.0
Operator's wife	46	5.4	6.0	12.6	14.4	14.4	14.4	14.4	14.4	14.4	14.4	12.6	5.4	142.8
Boy (not in school)	18	18.0	20.0	21.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	21.0	18.0	266.0
Boy (in school)	12					6.0	12.0	12.0	12.0	6.0				43.0
Girl (in school)	16					9.6	19.2	19.2	19.2	9.6				76.8
Total	xx	41.4	46.0	54.6	62.4	78.0	93.6	93.6	93.6	78.0	62.4	54.6	41.4	799.6
Large farm (tobacco-cotton-hog type)														
Operator	58	18.0	20.0	21.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	21.0	18.0	266.0
Operator's wife	55	5.4	6.0	12.6	14.4	14.4	14.4	14.4	14.4	14.4	14.4	12.6	5.4	142.8
Girl (in school)	17					9.6	19.2	19.2	19.2	9.6				76.8
Boy (in school)	12					6.0	12.0	12.0	12.0	6.0				48.0
Wagehand	23	18.0	20.0	21.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	21.0	18.0	266.0
Cropper	31	18.0	20.0	21.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	21.0	18.0	266.0
Cropper's wife	27	5.4	6.0	12.6	14.4	14.4	14.4	14.4	14.4	14.4	14.4	12.6	5.4	142.8
Boy (in school)	10					6.0	12.0	12.0	12.0	6.0				48.0
Total	xx	64.8	72.0	88.2	100.8	122.4	144.0	144.0	144.0	122.4	100.8	88.2	64.8	1256.4

1/ Days labor available per month for farm operator also represents days suitable for field work per month (excluding Sundays). Operator, cropper, boys 14 years of age or over and wagehands each considered one man-equivalent. Wives of operator and cropper considered 0.6 man-equivalent for all months except December, January, and February being considered 0.3 man-equivalent then. Boys 8-13 years considered 0.5 man-equivalent; girls 13-16, 0.8 man-equivalent; and girls 8-13, 0.4 man-equivalent. Children under 8 years of age were not considered available for farm labor.

From a seasonal distribution standpoint, the small and medium farms have more "free time" after the tobacco is harvested. About the only job of consequence that succeeds tobacco harvesting (on farms not growing peanuts) is corn harvesting. Cotton picking, of course, is done at a later date. Farms growing peanuts for digging are not greatly pressed for labor after tobacco is harvested, since runner peanuts are grown almost entirely. There is considerable latitude in the time they may be dug.

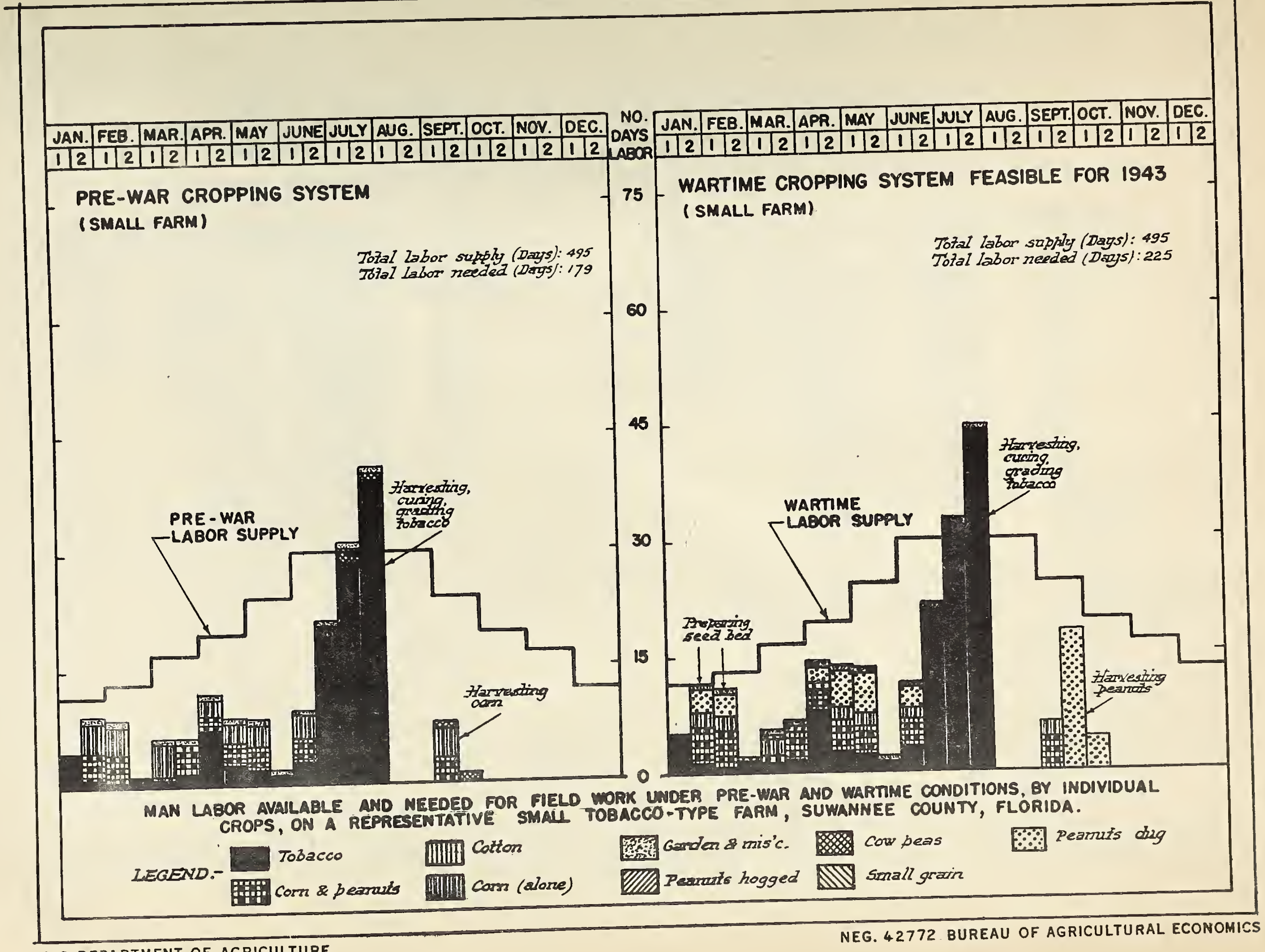
July, particularly the last 2 weeks, is the most critical time of year on all tobacco farms as far as labor supply is concerned. It should be noted that a part of the work in the July labor peak is performed at night - for example, about 77 of the 129 hours required on the medium-sized farm. The apparent peak is higher than would be the case if this night labor were not included. Actually, the height of the labor demand bar for the small farm would be reduced about $1\frac{1}{2}$ days for each 2-week period in July (fig. 3). Another factor affecting labor requirements, especially on medium and large farms, is the availability of 353 tractors. The use of these tractors will greatly reduce hand labor peaks on farms that have them during breaking, planting, and cultivating periods, and, from the standpoint of the county as a whole, will result in a reduction in the actual total labor requirements (fig. 4). Though they are not used to capacity under present conditions, more tractors could be utilized on a custom basis to overcome peak labor loads on individual farms with serious labor problems.

The Situation on a Small Farm

The labor supply on the representative small farm selected for this analysis consists of the operator, his wife, and three children - aged 12, 10, and 7. The combined work of the children 10 and 12 years of age is considered equal to 0.9 man-days during the latter half of May, in June, July, and August; and for the first half of September (table 6 and fig. 2). In general, operators of small farms in Suwannee County are younger than those operating the medium-and large-sized farms. The composition of the families varies, but the total man-equivalents available on small units tend to be similar.

More labor is required with the wartime organization than under pre-war conditions if the small farm is to carry out the feasible cropping system for 1943. This system includes the farm's contribution necessary to enable the county to realize its production goals (fig. 2).

With the feasible organization, the labor supply is more completely utilized because of the addition of 6 acres of peanuts and 0.2 acre of tobacco. On many small farms there will be opportunities to meet the extreme labor peak in the last 2 weeks of July by curing tobacco in cooperation with neighbors who are close by. The 2 acres of cowpea hay included in the pre-war



MAN LABOR AVAILABLE AND NEEDED FOR FIELD WORK UNDER PRE-WAR AND WARTIME CONDITIONS, BY INDIVIDUAL CROPS, ON A REPRESENTATIVE SMALL TOBACCO-TYPE FARM, SUWANNEE COUNTY, FLORIDA.

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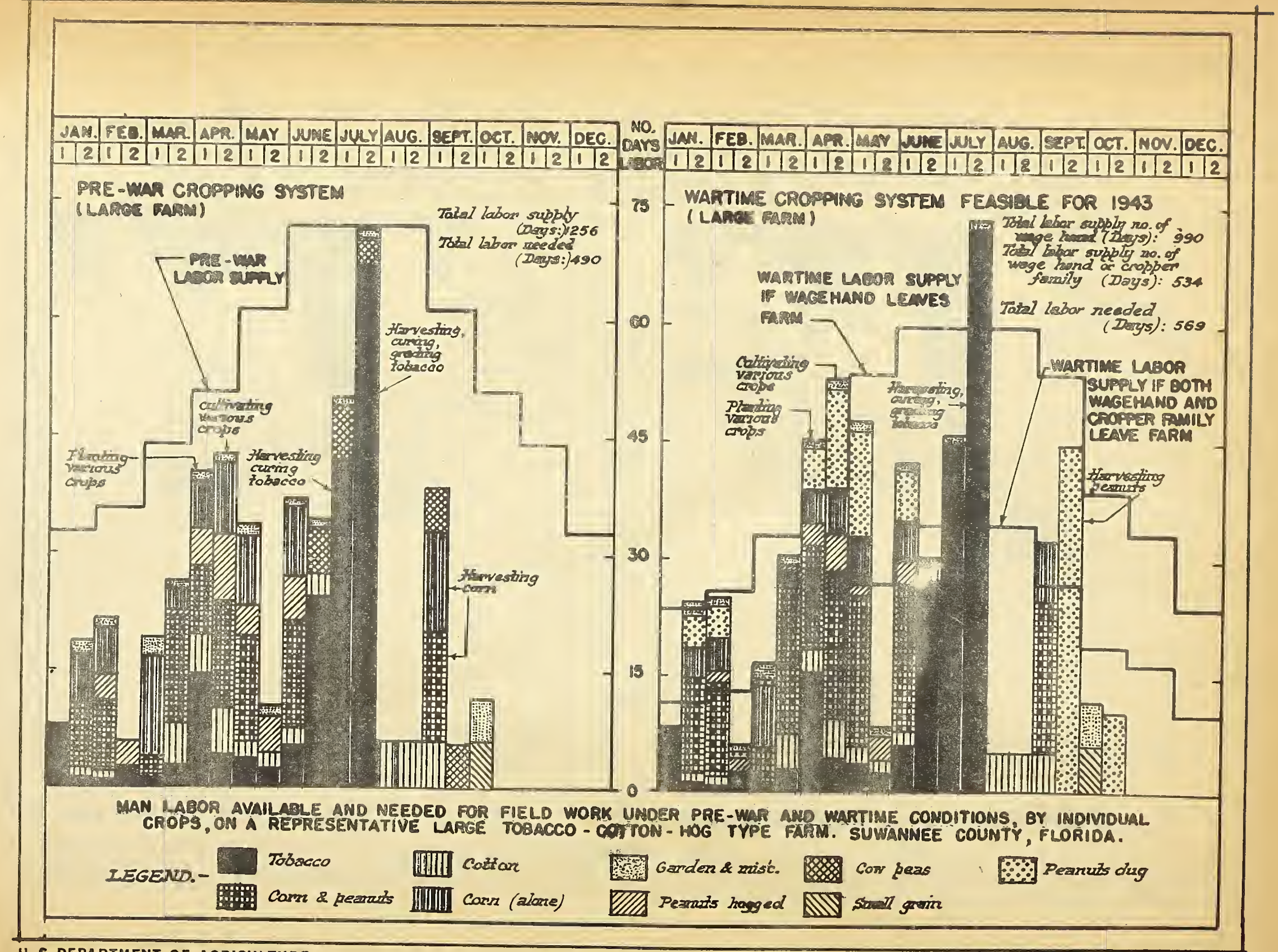
FIGURE 2



MAN LABOR AVAILABLE AND NEEDED FOR FIELD WORK UNDER PRE-WAR AND WARTIME CONDITIONS, BY INDIVIDUAL CROPS, ON A REPRESENTATIVE LARGE TOBACCO - COTTON - HOG TYPE FARM. SUWANNEE COUNTY, FLORIDA.

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FIGURE 3

organization are dropped because hay from the peanut crop can be utilized. The acreage of corn and peanuts interplanted is increased, whereas corn planted alone is decreased. This is done in order to provide more peanut grazing for hogs with the expanding hog enterprise suggested by the pork goal (table 7).

Even in the reorganization of the small farm about half the total cropland is not planted in any crop. It is a common soil-building practice in the area to allow a substantial portion of the cropland to "rest" every year. While this land is "lying out", a fairly heavy growth of native vegetation covers it, which, when turned under, farmers claim maintains crop yields (except cotton and tobacco) without fertilizer applications. The 1941 ACP payment for this practice was 75 cents per acre. Future opportunities for providing productive work to some of the underutilized labor may be found when cropping practices are developed which will permit more intensive use of the cropland on north Florida farms.

Table 7.- Pre-war and feasible 1943 wartime cropping system of typical small tobacco-hog type farm

Crop	Cropping system	
	Pre-war 1941	Wartime feasible 1943
	Acres	Acres
Tobacco	1.8	2.0
Peanuts dug	.0	6.0
Corn and peanuts interplanted	8.0	10.0
Corn planted alone	7.0	4.0
Cowpea hay	2.0	.0
Garden miscellaneous	0.7	.7
Idle or fallow cropland	28.6	25.4
Total	48.1	48.1

Figure 2 represents the situation that will exist with respect to family labor utilization on a representative small farm with a wartime cropping system. Even with such a system, only a small part of the labor available on the small farm is employed during the latter half of the year. Except for digging peanuts, the few tasks that remain after August 1, could be done by the wife and children. Ways to utilize this surplus labor for the benefit of the war effort should be developed. Migration to winter vegetable areas or to work in the lumbering and turpentine industries during this period would help the agricultural phase of the war effort and should be encouraged. Consideration also should be given to the combination of small farms as a means of improving labor utilization.

With both the pre-war and wartime organizations, labor needs exceed the family supply during July. The situation is slightly more acute with the wartime system because of the greater tobacco acreage, but since the problem has been met in the past by swapping labor, there is little reason to believe it could not be solved the same way in 1943. Still another factor to consider in connection with the labor demand is the fact (previously mentioned) that the July demand bar would be lowered several days if the hours spent at night in tobacco curing were deducted. As described above, most of the total labor required for tobacco actually is performed during short periods - hence the necessity for labor swapping. Cropping is an operation requiring a relatively large crew. Curing requires the attention of one man day and night for 3 days each time the crop is gone over.

The Situation on a Medium-Sized Farm

Under pre-war conditions the labor supply on the representative farm of this group is much more than adequate at all times of the year except during the tobacco harvesting period. After August 1, corn harvesting is about the only field work done on the farm. Some attention must be given the hogs after they are turned into the peanut field, but the amount of labor involved usually is negligible.

On a war basis, which anticipates an 18-year-old boy going to the Army and an increase in the amount of farm work to be done, the situation would be changed considerably. The tobacco harvesting peak, particularly, would become serious. However, the situation could be handled during the remainder of the year with some hired help for harvesting peanuts. The farm operator could accept outside employment most of the time during the last 5 months of the year.

The Situation on a Large Farm

Probabilities are that labor supply on most large farms in Suwannee County will be reduced drastically during the war period. On a pre-war basis, the usual large farm labor supply (two-family basis) is adequate for all peak periods and is more than adequate for other periods of the year. The pre-war labor supply could handle the wartime crop labor needs without difficulty if that supply were to remain on the farm. The wagehand might leave the farm during the war period without serious impacts on the labor supply even though the farm production is increased to the maximum feasible limit, but if both the wagehand and cropper family were to leave, the farm could not possibly meet the production goals (fig. 3 and table 8).

The wartime organization for the large farm considered in this discussion requires more labor than the pre-war setup because of the addition of 15 acres of peanuts to be dug, 0.3 acre of tobacco, and 15 acres of corn and peanuts interplanted. Partially to offset this increase, cowpea hay is dropped; corn alone is reduced 10 acres; and the acreage of peanuts alone for hogging is reduced 6 acres. This decrease in hog feed is replaced by the indicated increase in acreage of corn and peanuts interplanted (table 8).

The addition of 15 acres of peanuts to be dug greatly increases the need for labor during April and the last 2 weeks of September. Planting dates of peanuts to be dug could be varied to reduce the seriousness of the labor peak during the last of September.

Table 8.- Pre-war and wartime cropping system feasible for 1943, representative large tobacco-cotton-hog farm, Suwannee County, Florida

Crop	Cropping system: Pre-war 1941	Cropping system: Wartime feasible 1941 1/
	Acres	Acres
Tobacco	3.5	3.8
Cotton	6.0	5.0
Peanuts hogged	14.0	8.0
Peanuts dug	.0	15.0
Corn and peanuts interplanted	35.0	50.0
Corn alone	25.0	15.0
Cowpea hay	(10.0)	.0
Oats grazed	10.0	10.0
Garden miscellaneous	2.0	2.0
Idle or fallow cropland	39.5	36.2
Total	145.0	145.0

1/ With wartime cropping system, type changes to tobacco-cotton-peanut-hog.

There will be several months during which the available farm labor will not be used on the large farm - namely, most of August and October, and all of November and December. There are several other 2-week periods during the year when there is little farm work to be done. As with the small and medium farm labor supply, some use should be made of the labor during the "off" periods. This labor is immobile to a certain degree, particularly on farms with livestock to be cared for, even though field work is at a minimum. These farm operators could perform such tasks as aiding in scrap drives, helping with timber operations, or doing other types of war work.

CONSOLIDATING SMALL FARMS TO RELEASE FARM FAMILIES FOR WORK IN WAR INDUSTRIES OR FARM WORK IN CRITICAL AREAS

Unusual changes will be necessary if the available manpower is to be used effectively during wartime. Even with a feasible 1943 farm plan, representative small farms in Suwannee County will use less than half their potential home labor supply. If the present large number of small farms is to continue during wartime, underutilization of labor is almost inevitable. Income on such farms will be higher than during the last few years, but still below that necessary for a minimum-adequate-living standard. In the interest of the war effort, some plan should be made to utilize the surplus farm labor in Suwannee County and other comparable areas in industry or in farming areas where shortages are critical. Farm combinations would have to be included as a part of any such plan if the existing farm resources are to be kept in production. In combining existing small farm units, a guide to follow could be the present representative medium-sized farm unit; its business is of such size that the usual small farm labor supply can do the work with some assistance during tobacco harvest (fig.4). Using the representative medium-sized farm as a guide, total county production could be substantially maintained if small farms were combined on the basis of two small farms for every medium-sized farm so-formed. With such combinations it is estimated that 275 families could be released for other war work.

The small farms which could be combined most readily are in four type groups--namely, the tobacco, with 238 farms; the tobacco-hog, with 203 farms; the tobacco-cotton, with 53 farms; and the tobacco-cotton-hog, also with 53 farms (table 2). Small farms of these four types, comprising approximately 550 of the 774 small farms, could be combined more readily than those in the hog, subsistence, and miscellaneous type groups. Generally these types are less suitable for combination because a high proportion of them are part-time farms or are operated by handicapped people not able to carry on full-scale farm businesses. It is recognized that because of various factors--such as old age of the operator--combination would not be practicable in some instances. For purposes of this analysis it is assumed that most of the small farms of the first four types noted above could be combined. Probably enough combinations could be made among the other groups to replace the unsuitable cases.

Organizations on the small farms are not complex. Generally combination would be possible on the basis of two small farms for every medium-sized farm so-formed. Total harvested cropland acreage on three of the types, multiplied by 2, slightly exceeds the harvested acreage on the representative medium-sized farm to which they would be converted (table 10). A reasonable organization for a representative situation developed from two small tobacco farms is shown in table 9.

Table 9. - Cropping system of the medium-sized farm resulting from the combination of two small tobacco-type farms, Suwannee County, Florida 1/

Crop	Prior to combination			Suggested combination
	Farm No. 1	Farm No. 2	Total 2 farms	
	Acres	Acres	Acres	Acres
Tobacco	2.0	2.0	4.0	3.1
Peanuts hogged	.0	.0	.0	4.0
Peanuts dug	6.0	6.0	12.0	2/ 8.0
Corn and peanuts interplanted	10.0	10.0	20.0	20.0
Corn alone	4.0	4.0	8.0	3/10.0
Oats grazed	.0	.0	.0	8.0
Garden and miscellaneous	.7	.7	1.4	1.0
Total harvested cropland	22.7	22.7	45.4	54.1
Idle or fallow cropland	25.4	25.4	50.8	42.1
Total cropland	48.1	48.1	96.2	96.2

1/ This farm would be considered a tobacco-peanut-hog type, as peanuts are on the farm in 1943. They were not a part of the cropping system of the representative medium-sized tobacco-hog farm in 1941.
2/ Could be increased to 12 A. by digging the 4 A. otherwise hogged off.
3/ Part of the 10 acres could be interplanted with peanuts if desired.

Small farms in the other three type groups suggested for combination also could be combined on the basis suggested by table 9. There would be a net acreage change in the county for some crops if these combinations were made. For example, the tobacco acreage would be reduced 0.9 acre as a result of the merger of the two small farms (table 9). Peanuts dug would be reduced by 4 acres, since these 4 acres of peanuts would be planted alone for hogs on the reorganization basis suggested. Tobacco production in the county would be reduced by 303 acres if 550 small farms were combined. Other acreage changes for the county, assuming that all small farms combined would otherwise follow the 1943 feasible cropping plan, would be as follows:

Table 10.- Estimated acreage changes for selected crops resulting from combination of small farms, 1943, Suwannee County, Florida

Crop	1943 1/ feasible acres entire county	Change in total county acreage if 550 small farms combined	
		Acres less	Acres more
Tobacco	3,648	303	-
Corn and peanuts interplanted	33,000	2,304	-
Peanuts dug	15,000	2,082	-
Cotton (short-staple)	2,500	371	-
Peanuts solid hogged	6,000	-	2,188
Oats grazed	2/	-	4,376
Corn alone	17,000	-	2,930

1/ From Florida production capacity study for 1943.
2/ Data not available.

Combining these small farms would mean that livestock and farm tools of farmers released would be available for use elsewhere. Most of them would be needed locally. The vacated farm dwellings and other buildings could be used to supply much-needed storage space for peanut hay and other feeds for which usually no storage place is available. Workstock and other livestock released by the outgoing farm families would be needed by and could be sold to the farmers remaining.

Labor requirements and supply on the medium farm, resulting from the combination of two small farms, are shown in figure 4. 6/ As on most other sizes and types of farms, the labor demand exceeds the supply during July. Even under pre-war conditions this situation existed. By working longer hours, swapping with neighbors, and using women and children to best advantage, this peak could be overcome.

The difference is not great between usual organizations of each type within which two small farms would be combined to form a medium-sized farm (table 11). Total harvested cropland acreages per farm within each of the different types of small farms do not vary greatly; neither do the acreages of idle cropland. Furthermore, the idle cropland is commonly as good in quality as the harvested cropland for any given year. Switching crops from one part of the cropland is done in an effort to maintain the fertility level. Owing to the similarity of total acreages and land quality, two small farms of different types (among the four types suggested) could be combined almost as readily as two small farms of the same type. This might be especially important because of the relative location of small farms within the county being considered for combination. The 1943 feasible cropping system of representative small farms which would be combined is shown in table 11.

Table 11.- Feasible cropping systems for 1943, four representative small farms of different types 1/

Crop		Type of small farm 2/			
		Tobacco	Tobacco-hog	Tobacco-cotton	Tobacco-cotton-hog
Tobacco	Acres	2.0	1.9	1.3	1.3
Cotton	"	.0	.0	4.0	3.0
Peanuts dug	"	6.0	6.0	5.0	6.0
Corn and peanuts interpltd	"	10.0	19.0	10.0	19.0
Corn alone	"	4.0	.0	6.0	.0
Garden and miscellaneous	"	0.7	0.7	0.7	0.7
Total harvested crops	"	22.7	27.6	27.0	30.0
Idle or fallow cropland	"	25.4	22.3	30.2	26.7
Total cropland 3/	"	48.1	49.9	57.2	56.7

1/ Based on data obtained in conjunction with the 1943 production goals study, for which Suwannee was a sample county. Feasible organizations were outlined as a result of meetings with representative farmer groups.

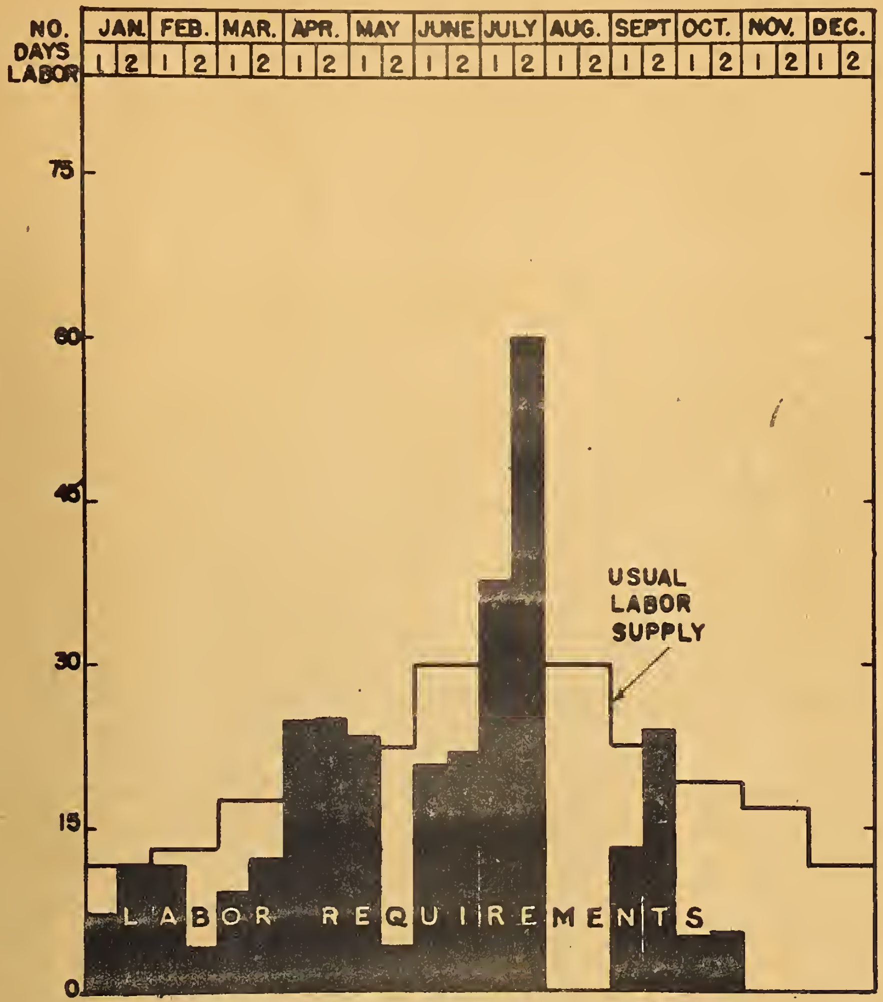
2/ This is the type designation based on the 1941 farm plan. The term "peanut" could be added to the type designation of these farms for 1943, because in each case the peanut enterprise has been added to the usual 1941 farm plan.

3/ The figures indicated are very close to the arithmetical average of total cropland for all farms of that particular size and type in the county.

6/ The labor supply on this chart is that of the typical small farm family considered in table 6.

LABOR SUPPLY & REQUIREMENTS ON THE FARM UNIT RESULTING FROM THE COMBINATION OF TWO SMALL TOBACCO TYPE FARMS 1/

SUWANNEE COUNTY, FLORIDA.



1/ ASSUMES A CROPPING SYSTEM FOR 1943 CONSISTENT WITH FEASIBLE PRODUCTION CAPACITY.
(Includes requirements for field crops only.)

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FIGURE 4

The farm families thus released would be available for agricultural labor in areas where there is a deficit, or for work in war industries. These "former" small farmers remaining in the county would have substantially higher net cash farm returns, since they would be operating medium-sized rather than small farms (77 percent higher, according to data obtained in the 1943 production capacity study). The availability of credit facilities for handling property transfers involved, as well as the willingness of small farmers to utilize the additional land, has been assumed.

Considering the matter of using land resources on small farms from another standpoint, many of these undoubtedly could be absorbed by some of the more efficient medium- and large-sized units. Whether or not this sort of combination would be practicable would depend largely on the labor supply of the particular farms concerned. The well-lying topography of the county, similarity of soils, and the density and the location of the farms would make such combinations an important part of any large amount of wartime farm consolidation.

Estimated Labor Required and Available for Producing Total 1943 Feasible Crop Acreages in Suwannee County

The anticipated labor supply for 1943 should be fully adequate to handle the total 1943 feasible crop acreages for Suwannee County. The 1943 acreage estimates are well above the 1942 acreages for important crops. During only three periods would the available labor be almost fully used: April (planting), July (tobacco harvesting), and September (peanut digging, cotton picking, and corn harvesting). For most remaining months the labor available greatly exceeds requirements (fig. 1). This appears true even though substantial numbers of farm workers will continue to go to the Armed Forces or to industry. Estimates of labor requirements are based upon usual periods of operation. To the extent that some farmers perform the various operations at other than the usual period, the peaks would be "smoothed."

Method used:- Estimates of total labor requirements for crop production in 1943 were made on the basis of labor requirements per acre and the acreages of crops estimated as feasible for 1943. Requirements have been expressed in terms of 10-hour days.

The available farm labor supply was computed on a 10-hour-day basis. The total supply was derived by adding the potential contribution of each segment of the population available for farm work. Men entering the Armed Forces, out-migration, and death were considered. The number of persons in each segment, which follows, was computed to be that of January 1, 1943.

(1) Farm operators and hired hands: 2737.

(2) Rural farm women between ages of 14 and 60 not in school: 1430.

This number represents 60 percent of all rural farm women in the county. It was assumed that these women would be available for performing only 30 percent as much work as adult male labor during December, January, and February, and 60 percent as much during the remainder of the year.

(3) Rural farm and nonfarm males of school age: 465.

The labor from this source was considered available during the months of April, June, July, and August. This would require a change in the dates of the school term. (It should be observed that for the "over-all" county analysis the 4-month vacation period was assumed to be April, June, July, and August, whereas for the analysis of representative farm situations the vacation period was considered to be the last half of May; all of June, July, and August; and the first half of September.) Boys from 8 to 13 years of age were considered 0.5 man-equivalent; those 14 or over were considered 1.0 man-equivalent for the 4-month period.

(4) Rural farm (only) females of school age: 462.

This labor, also was considered available only during April, June, July, and August for the "over-all" county situation. During those 4 months the girls are considered available for performing only 60 percent as much work as adult male labor.

(5) Domestic servants: 363

Domestic servants comprise this group of workers. They usually do not work in the fields, but could do so during peak months. They were considered available during April, May, June, July, August, and September.

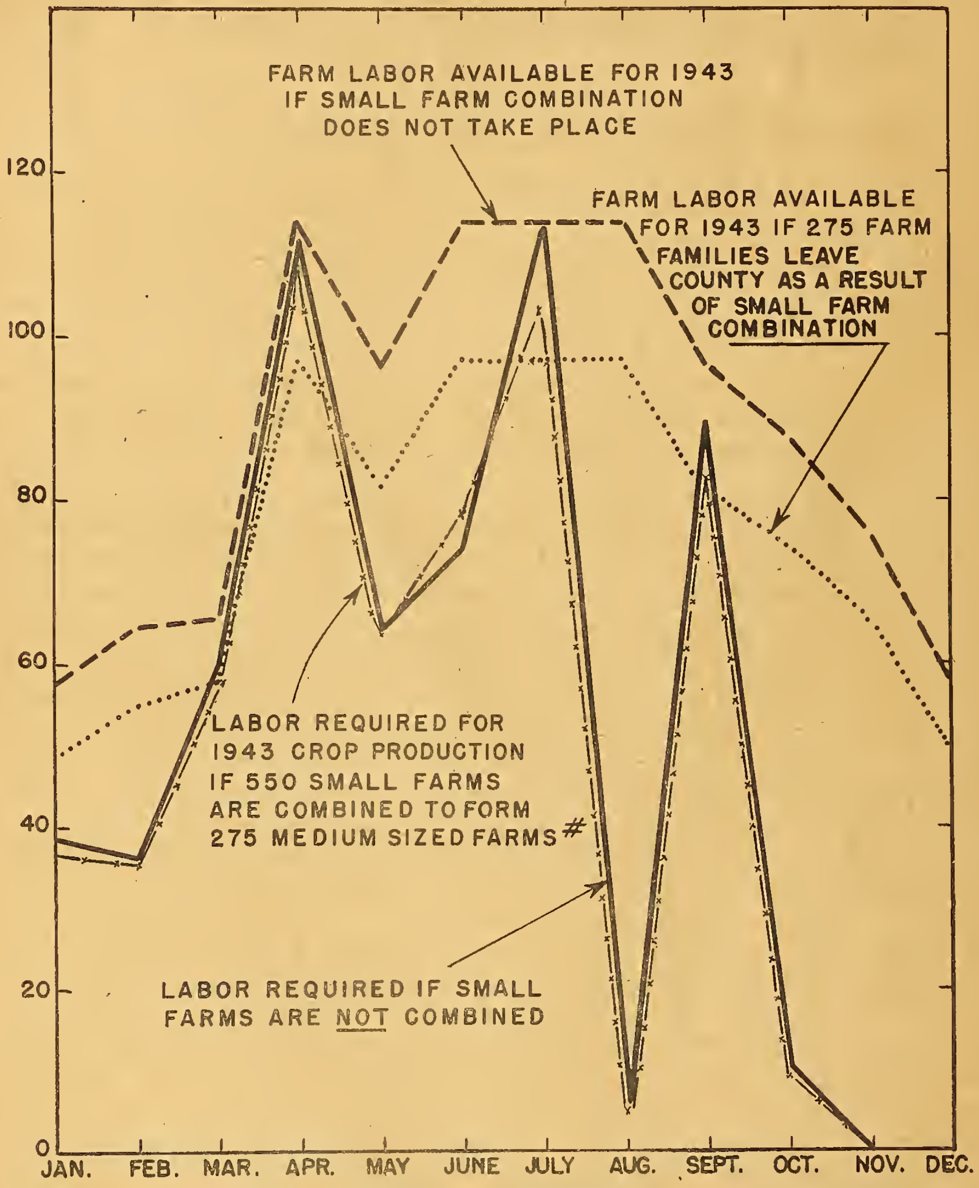
Total County Labor Supply and Requirements if Small Farms are Combined

Many more workers could leave the county without seriously disrupting the county's total production in 1943, if farm workers would put in longer hours per day during the peak labor requirement periods, if available tractors were used to greater advantage, and if women, children, and youths of school age were used to greatest advantage. Farm organization and combination will permit a further release of entire families for work in other farm areas or in war industries.

If, as a result of small farm combination, total feasible crop acreages in Suwannee County were changed, total labor requirements for field crop production would be slightly reduced. If the 275 farm families released by combining the 550 small farms were to leave the county, total supply would decrease, but not enough to cause a material shortage of labor, provided that available labor is effectively used (fig. 5). Except during April and July, the labor supply would remain greater than requirements. The peak requirements could be met if more than 10 hours a day were put in by farm workers for short periods and if better utilization were made of the labor performed by women and children. The probabilities are that, if necessary, more than 60 percent of the farm women not in school and between the ages of 16 and 60 could work during this period. Moreover, if an emergency arose, labor could be made available during tobacco harvest from the business establishments of the county seat on certain days. Another factor for consideration is that some farmers do not complete harvesting until August 1 to 10. From a county total standpoint, this would lower the July peak (fig. 5). Another consideration which would depress the height of the labor requirements' point in July is that 60 percent of the labor requirements for the tobacco-curing process are performed at night; the worker sleeps by the curing barn, rousing every few hours to tend the fires. Full utilization of the 353 tractors in the county would help to overcome the April peak, inasmuch as the amount of time required per acre cultivated or planted is greatly reduced by their use.

LABOR AVAILABLE AND REQUIRED FOR 1943 FEASIBLE ACREAGES OF MAJOR CROPS IF 550 SMALL FARMS ARE COMBINED TO RELEASE 275 FARM FAMILIES FOR OTHER WAR WORK*

SUWANNEE COUNTY, FLA.



* *BASED ON TOTAL 1943 FEASIBLE COUNTY ACREAGE OF ALL IMPORTANT CROPS AND TOTAL LABOR AVAILABLE IN THE COUNTY AS OF JAN. 1, 1943*

△ *10 HOURS LABOR = 1 MAN DAY*

# *THE SMALL AMOUNT OF LABOR PERFORMED ON LIVESTOCK IN THIS AREA IS USUALLY ACCOMPLISHED BEFORE AND AFTER THE 10-HOUR WORK DAY*

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FIGURE 5

SUMMARY

(1) Tobacco requires much more hand labor per acre than any other Suwannee County crop (514 hours per acre with 2-mule equipment) and is responsible for the serious peak labor problems. About 85 percent of all Suwannee County farms grew tobacco in 1941. Although tobacco requires much more labor per acre than any other crop grown in Suwannee County, it also returns more gross cash income. Most of the nine major type groups of farms in the county grow tobacco. Farms which do not, are primarily the small hog farms, production for home use farms, and most of those in the miscellaneous group.

(2) Possible labor shortages during April and July, the critical months, could be alleviated by the following means:

(a) Longer hours per day. (This report is based on 10 hours per day for field work.)

(b) Making maximum utilization of the labor of women and children.

(c) Through a county labor committee, developing plans for recruiting school youths not living on farms.

Plans could be developed also for recruiting persons employed in the county seat and other population centers of the county, in the event of a serious situation.

(d) More farmers following the "unusual" practice of delaying tobacco setting a few days beyond the usual period to permit harvesting to extend into the first 10 days of August, even though doing so would mean getting the tobacco on the market a few days later than desired.

An extension of the time during which tobacco is auctioned from 2 to 3 weeks might help. The peak during April could be alleviated by delaying the planting of some other crops—such as corn and peanuts interplanted.

(3) It is estimated that 550 small farms of four types could be combined to permit 275 small farm families to move out of the county to work in war industries or to perform farm work in areas with critical problems.

(4) The 15,000 acres of harvested peanuts feasible for 1943 could be harvested easily with the anticipated labor supply.

(5) Total mule labor requirements are less than man requirements for most crops.

(6) The farm labor supply in Suwannee County has been underutilized on the basis of 1941 representative organizations: Only 36 percent of the small farms', 35 percent of the medium-sized farms', and 37 percent of the large farms' potential labor supply were utilized. Only a slightly greater utilization of the usual supply will be made in 1943.

(7) Satisfactory long-time adjustments in the county are difficult to comprehend unless ways are devised to maintain the fertility of the soil without annually leaving such a high proportion of the cropland out of cultivation. Unused land, unused labor, and a small acreage of harvested crops per capita are not consistent with the future development of a high level of living.

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